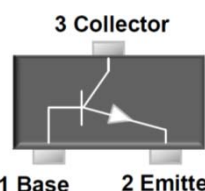


**Small Signal Product**
**NPN Small Signal Transistor**
**FEATURES**

- Epitaxial planar die construction
- Surface mount device type
- Moisture sensitivity level 1
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- Pb free and RoHS compliant
- Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code


**MECHANICAL DATA**

- Case: SOT- 23 small outline plastic package
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed: 260°C/10s
- Weight: 0.008gram (approximately)

**SOT-23**
**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)**

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	P <sub>D</sub>	200	mW
Collector-Base Voltage	V <sub>CB0</sub>	BC846	80
		BC847	50
		BC848	30
Collector-Emitter Voltage	V <sub>CEO</sub>	BC846	65
		BC847	45
		BC848	30
Emitter-Base Voltage	V <sub>EBO</sub>	BC846	6
		BC847	6
		BC848	5
Collector Current	I <sub>C</sub>	0.1	A
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150	°C

Notes: 1. Valid provided that electrodes are kept at ambient temperature

PARAMETER	SYMBOL	MIN	MAX	UNIT	
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	BC846	80	V	
		BC847 I <sub>C</sub> = 10μA I <sub>E</sub> = 0	50		
		BC848	30		
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	BC846	65	V	
		BC847 I <sub>C</sub> = 10mA I <sub>B</sub> = 0	45		
		BC848	30		
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	BC846	6	V	
		BC847 I <sub>E</sub> = 1μA I <sub>C</sub> = 0	6		
		BC848	5		
Collector Cut-off Current	I <sub>CBO</sub>	-	100	nA	
Emitter Cut-off Current	I <sub>EBO</sub>	-	0.1	μA	
DC Current Gain	h <sub>FE</sub>	BC846A, BC847A, BC848A	110	-	
		BC846B, BC847B, BC848B	200		
		BC847C, BC848C	420		
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 100mA I <sub>B</sub> = 5mA	-	0.5	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 100mA I <sub>B</sub> = 5mA	-	1.1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V I <sub>C</sub> = 10 mA f= 100MHz	100	-	MHz

**Small Signal Product**

RATINGS AND CHARACTERISTICS CURVES (BC846A/B, BC847A/B/C, BC848A/B/C)

(TA=25°C unless otherwise noted)

Fig.1 Static Characteristic

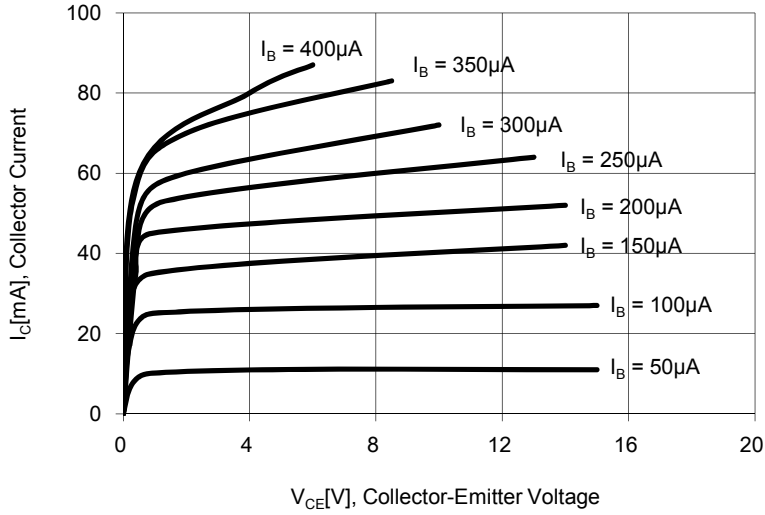


Fig.2 DC Current Gain

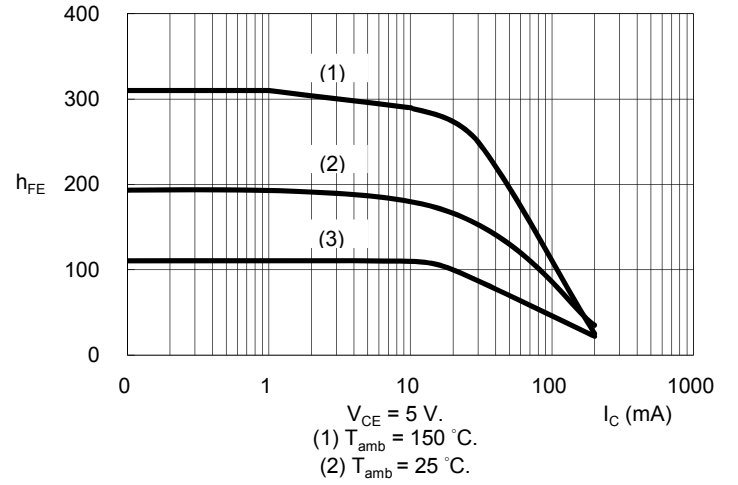


Fig.3 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

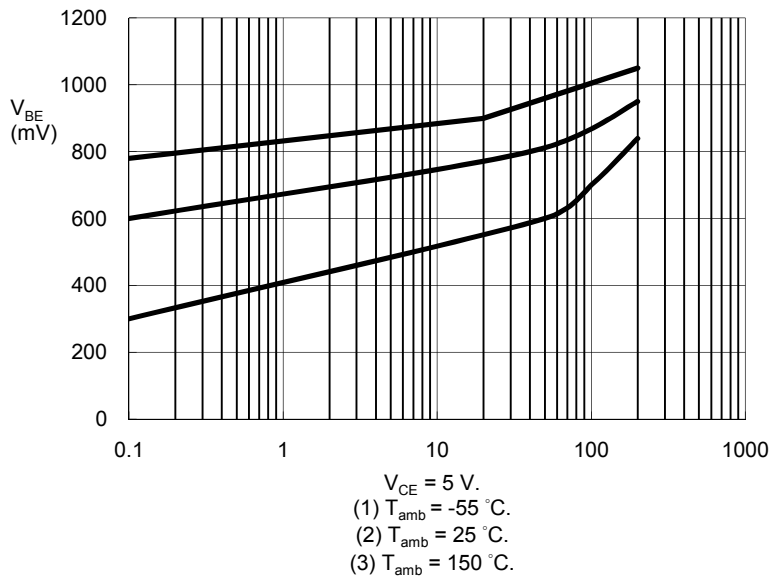


Fig. 4 Base-Emitter On Voltage

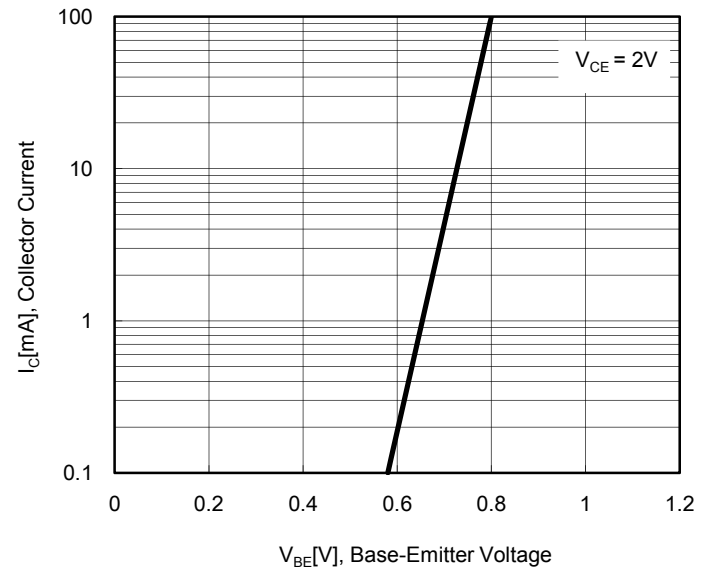


Fig.5 Collector Output Capacitance

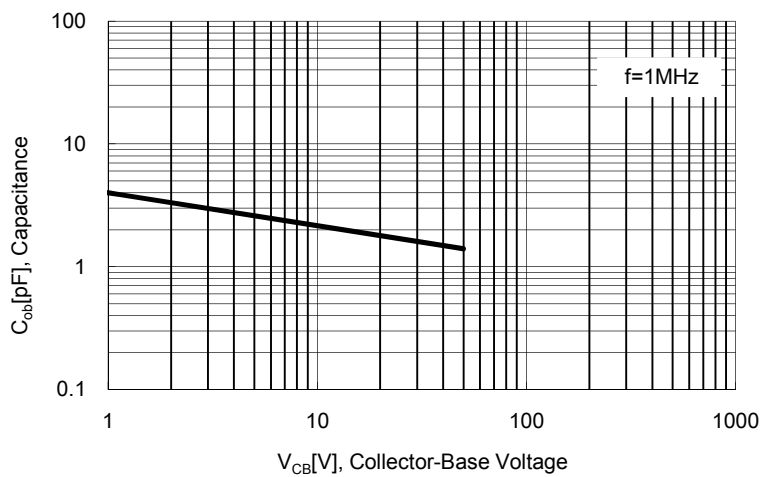
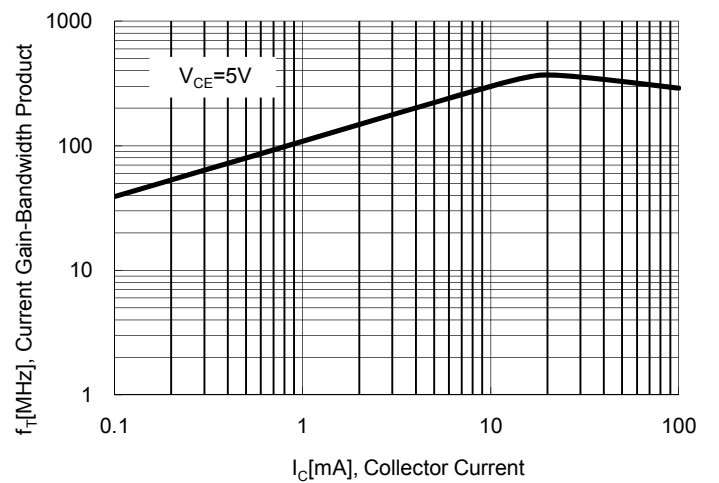


Fig. 6 Current Gain Bandwidth Product



**Small Signal Product**

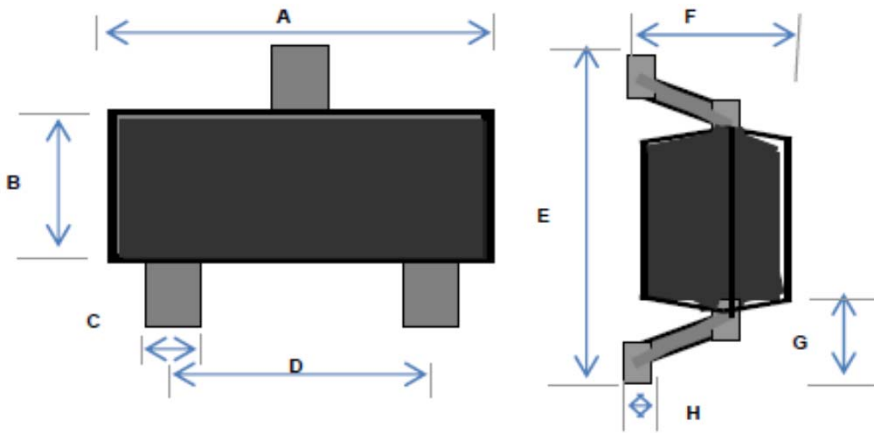
ORDERING INFORMATION						
PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING	MARKING
BC846A	(Note)	RF	G	SOT-23	3K / 7" Reel	1A
BC846B		RF	G	SOT-23	3K / 7" Reel	1B
BC847A		RF	G	SOT-23	3K / 7" Reel	1E
BC847B		RF	G	SOT-23	3K / 7" Reel	1F
BC847C		RF	G	SOT-23	3K / 7" Reel	1G
BC848A		RF	G	SOT-23	3K / 7" Reel	1J
BC848B		RF	G	SOT-23	3K / 7" Reel	1K
BC848C		RF	G	SOT-23	3K / 7" Reel	1L

Note: Manufacture special control, if empty means no special control requirement.

EXAMPLE					
PREFERRED P/N	PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
BC846A RFG	BC846A		RF	G	Green compound
BC846A-D0 RFG	BC846A	D0	RF	G	Green compound

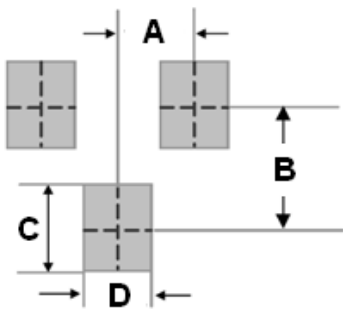
**Small Signal Product**

DIMENSIONS



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.1 REF		0.004 REF	

SUGGEST PAD LAYOUT



DIM.	Unit(mm)	Unit(inch)
	Typ.	Typ.
A	0.95	0.037
B	2.0	0.079
C	0.9	0.035
D	0.8	0.031

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